

CARBON PRICING



To: Carbon Price Policymakers
Subject: Your Negotiating Goals in “World Energy”

Welcome to the global climate and energy policy conference. You will make decisions regarding a global carbon price and the distribution of those revenues over the coming decades.

You represent government officials from the world’s leading economies and leading emitters (the U.S., China, the E.U., Brazil, Russia, India, etc.) who have the power to set carbon price policies. Carbon prices can be set in markets (e.g., the European Emissions Trading Scheme), or as taxes.

As government officials, you are responsible to your stakeholders – *Conventional Energy Supply*, *Renewable Energy Supply*, *Energy Efficiency*, and *Land Use & Agriculture*. As such, your primary role is to **listen to your stakeholders and make decisions in a way that gives the best chance for implementation**.

You make decisions as a whole. Your goal is to achieve the best outcome for the groups you represent. Do your best in the time allotted.

As a group, you will:

1. **Set** the global average carbon price (\$/ton of CO₂), if any, and when it is implemented. You can also determine how many years it will take for the price to be phased in.
2. **Decide** what fraction of the revenue generated by the carbon price goes to each of four groups:
 - a. Fossil fuel industry – for example, as compensation for the fossil fuel industry’s stranded assets;
 - b. Clean Energy Research & Development – this includes the *Renewable Energy Supply*, *Energy Efficiency*, and *Land & Agriculture* groups – for example, as subsidies to promote renewable production, energy efficiency, and programs to conserve forests;
 - c. The public – to offset any increase in energy prices. Often called a “dividend.”
 - d. Deficit reduction – to help balance government budgets and pay for government programs.
3. **Lobby and negotiate with** the other parties to encourage them to take actions that contribute to solving the climate change problem and help the groups you represent.

The best available science shows that greenhouse gases (GHGs) emitted by human activity are already changing the climate, that the risks of further climate change to our economy and to human welfare are serious, and that avoiding the worst impacts is possible. The internationally agreed upon goal is to limit global warming to well below 2°C above preindustrial levels. Warming above this level threatens the economy and human welfare of all nations. Your own climate science experts agree with this assessment.

However, you must balance the imperative to prevent dangerous climate change with the needs of your key stakeholders—the other teams. You would not be in a position of power without their support. Along with the public, these groups represent powerful interests who provide resources to inform and lobby you, and fund your election campaigns.

The world economy today depends on fossil fuels. Cutting fossil fuel use may be costly to consumers and the economy in the short run and certainly threatens the profitability of firms dependent on fossil fuels. Limiting warming to 2°C means a large fraction of known fossil fuel resources must remain in the ground. Past investments in these resources will become stranded assets, never generating their expected return to shareholders or national governments. Firms now dependent on fossil fuels will have to reinvent themselves or face going out of business. Nations dependent on fossil fuels will have to transform their energy systems and economies, even as they strive to develop.

*World Energy role play exercise developed by Climate Interactive, MIT Sloan School of Management, and UMass-Lowell.
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In much of the world, extensive fossil fuel infrastructure is already in place, and in many developing nations, new fossil energy capacity is still being rapidly developed. Abandoning this infrastructure would be costly. At the same time, the impacts of climate change—including rising sea levels, more extreme weather and the geopolitical dislocations these impacts may create—pose serious risks to fossil and other existing energy supply assets.

Further, growing climate damage increases the likelihood of regulations and other policy changes that will adversely affect the fossil industry even as they may stimulate low-carbon, renewable sources. To that end, you are actively exploring how you might use your regulatory power to drive an energy transition to low-carbon economies.

Expert analyses are clear: a price on carbon is the most economically efficient way to achieve emissions reductions. You must balance the need to meet climate goals with the demands of your stakeholders, or risk being removed from office. Policies that immediately impose a high price on carbon are likely to meet resistance, yet many trends point in the direction of carbon price policies gaining acceptance:

- Since the 1990s many countries have enacted carbon prices (see table) and more are adopting policies.
- Many conservative economists support a carbon price, and more than two dozen of the largest US firms, including five oil companies, now incorporate a price for carbon pollution in their strategic and financial planning. ExxonMobil uses a \$60/ton planning price. Microsoft uses about \$6/ton.
- While some nations, such as the U.S., have yet to enact national carbon price policies, regional groups (e.g., California and the northeastern US) have already done so.

Notes on actions:

1. **Set a carbon price.** A price on carbon will not only push emissions down, but will also create revenue that could be given back to the public or industry as a dividend, or used to support low-carbon energy research, development, and deployment. Lowering emissions would create many public health, environmental and social co-benefits that the public and government officials often overlook. For example, lower coal use will reduce mercury emissions and improve air quality, cutting lung disease and deaths, particularly in the developing world. Of course, a carbon price will also increase costs for consumers and companies and decrease shareholder value for firms heavily dependent on fossil fuels.

2. **Decide what share of the revenue goes to the fossil fuel industry, clean energy research & development, the public, and government.** A carbon price of \$30/ton would generate more than \$1 trillion/year in revenue globally. That revenue could be used to address many of the world’s problems, including: stimulating the economy by redistributing it to the public or cutting income taxes; funding R&D and investments in clean tech and energy efficiency; or reducing government deficits. No one wants to pay more for energy. Interest groups will lobby hard to be compensated or else will oppose your efforts to increase the market price of carbon-based energy to reflect its true costs. The public wants all the money refunded to them so their net costs are no higher. Energy intensive industries including car manufacturers, airlines, the steel industry, etc. want exemptions, and the fossil fuel industry wants to be compensated for the loss in the value of their reserves and assets. Budget hawks around the world want to use the revenue to cut government deficits. You must balance the benefits the revenue can provide against the political realities.

3. **Lobby and negotiate.** Implementing a carbon price is politically difficult. Other groups can take action to mitigate GHG emissions without a carbon price. The *Conventional Energy Supply* and *Renewable Energy Supply* groups can establish subsidies or pricing to incentivize or limit energy sources. The *Energy Efficiency* group can improve energy use across stationary and mobile sources by implementing voluntary programs that encourage energy savings, and lobby governments to mandate efficiency improvements through programs such as fuel standards for cars. The *Land and Agriculture* group can implement policies to reduce emissions of methane (CH₄) and nitrous oxide (N₂O), both potent GHGs.

US\$/ton CO ₂	Examples of existing carbon prices
139	Swedish carbon tax
101	Swiss carbon tax
77	Finland carbon tax
64	Norway carbon tax (upper)
55	France carbon tax
36	Iceland carbon tax
29	Denmark carbon tax (fossil fuels)
27	BC carbon tax
25	UK carbon price floor
23	Alberta carbon tax
21	Slovenia carbon tax, Korea ETS
16	EU ETS
15	California CaT, Ontario, Quebec
9	Beijing pilot ETS
8	Portugal carbon tax, Swiss ETS
7	Shenzhen pilot ETS
6	Shanghai pilot ETS, Tokyo
6	CaT, Colombia, Latvia
4	RGGI, Chongqing pilot ETS
3	Mexican carbon tax (upper)
1	Tianjin pilot ETS
<1	Poland carbon tax

World Bank, Ecofys (2018). *State and Trends of Carbon Pricing*